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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,028	12/20/2000	Junichi Hayakawa	0670-251	6800

7590

03/28/2002

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EXAMINER

LOCKETT, KIMBERLY R

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 03/28/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/720,028

Applicant(s)

HAYAKAWA ET AL.

Examiner

Kim R. Lockett

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pak in view of Wooderson.

Pak discloses the use of a speaker diaphragm having a generally cone shape, comprising a plurality of projections (11) forming a periodical structure along a circumferential direction in a slanted area of the speaker diaphragm, each recess with a bent portion (claim 2) in radial direction (claim 3) extending radially from a central area to an edge portion and curving along the circumferential direction as the speaker diaphragm comes near to the edge portion, and a plurality of recesses (12) formed between the plurality of projections.

Pak does not disclose the use of a surface that is curved in an area from each projection.

Wooderson et al discloses the use of a speaker diaphragm having a generally cone shape, comprising a plurality of recesses on surface that is curved in an area from each projection to each recess.

The device taught by Pak forms a screw propeller shape (see figure 3)(claim 5).

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Regarding claim 4, the bottom area of the recess as taught by Wooderson et al is thicker than another area (see figure 7)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the speaker as taught by Pak with the recesses as taught by Wooderson in order to permit an efficient means of transmitting sound.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sawafuji and Faraone disclose the use of speaker diaphragms.

4. Any inquiry of a **general nature or relating to the status of this application or filed papers** should be directed to the **Group receptionist whose telephone number is (703) 308-0956**.

Papers related to this application may be submitted to Group 2800 by facsimile transmission. Papers should be faxed to Group 2800 via the PTO 2800 Fax Center located at Crystal Plaza 4. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 O.G. 30 (November 15, 1989). The Group 2800 CP 4 Fax Center number is (703) 308-77(22 or 24).

For assistance in **Patent procedure, fees or general Patent questions** calls should be directed to the **Patents Assistance Center (PAC)** whose **telephone number is 800-786-9199**. Assistance is also available on the Internet at www.uspto.gov.

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For requesting copies of Cited Art, Office Actions or the like, or
General Problem solving, calls should be directed to the TC 2800 Customer
Service Office whose telephone number is 703-306-3329 or by fax at 703-
306-5515.

Any inquiry concerning **this communication or earlier communications** from the examiner should be directed to **Kim Lockett** whose telephone number is **(703) 308-7615**. The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi, can be reached on (703) 308-3370.


Kim Lockett
Patent Examiner
Art Unit 2837